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Agro-Business of Cashew Nuts in Casamance (Senegal): Strengths, Constraints and Industrialisation Prospects

Sene Abdourahmane Mbade, PhD
Assane Seck University, Geography Department, Ziguinchor, Senegal

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Abstract

This paper deals with the problem of cashew nuts agro-business in Casamance, Senegal. The internationalization of the marketing of this commodity in virtually all African producing countries gives it an increasingly important place. The methodology is based on a literature review and field surveys, followed by the research conducted using the mapping and data processing software. Low production is due essentially to the nature of the farms which are traditional, family-owned smallholdings. The cashew nut trade is becoming international, with the involvement of foreign actors, especially Indians. The establishment of Indian exporters in the city of Ziguinchor has led to a rapid price escalation due to an upsurge in demand, boosted job creation and increased the city's tax revenues. Ziguinchor has thus become the hub for the flows of the product and people in the sub-region. Industrial processing is faced with a number of challenges, relating especially to the inadequacy of commodity supply and the obsolescence of the equipment. The main recommendation calls for greater State involvement in order to regulate the market and strengthen the financial capacities of processors to ensure the successful industrialization of the product.

Keywords : Agro-business, cashew nut sector, industrialisation, Casamance, Senegal

Introduction

Agro-business is seen in Africa as a crucial alternative for solving the problems of development and poverty reduction. According to Sène (2007), agro-business is the high road for the advent of modern, productive and competitive export-oriented agriculture, as well as a powerful stimulus for investors. Several theories have shown that agricultural growth is a prerequisite for economic growth and even for industrialization (Sosoli, 2014). Thus, Rostow (1960), in his definition of the transition - the second phase of

his development theory - emphasizes the importance of agriculture, which not only makes it possible to feed the growing population (Verter and Becvarova, 2014), but also encourages exports and the creation of an environment that is conducive to industrial development. Similarly, for Bairoch (1960), the development and transformation of the agricultural sector have enabled progress in the area of industrialization. The works of UNIDO (2011) and the World Bank (2008) also show that improving a country's agro-business contributes significantly to its economic growth.

The importance of cashew agro-business in the West African States justifies our interest in the subject. Today, of the world's leading cashew-producing countries, four are West African countries, including Côte d'Ivoire, which ranks second with an estimated output of 450,000 tonnes in 2012 (Rongead, 2013). In view of the significant changes in the territorial, economic and social spheres, triggered by this new sub-sector in several countries in the West African region (Côte d'Ivoire, Burkina Faso, Benin, Guinea Bissau, Ghana, Nigeria, Senegal, etc.), a significant number of scientific works have dealt with the subject in this region of Africa (Andouin and Gonin, 2014, Sokemawu, 2015, Adegbola and Zinzou, 2010, etc.). These works have focused, more often than not, on the internationalization of the marketing of local production and land dynamics in cashew-growing areas. In Senegal, the published works on cashew nuts are mostly reports produced by public and private organizations working in the sub-sector, such as those published by PADEC (2010) and Senagrosol-Consult (2003). These reports deal with the status of the industry at the national level and are primarily concerned with obtaining relatively reliable quantitative data. However, the reports are often found wanting when it comes to the scientific analysis of the factors hindering the development of the sub-sector in Senegal.

Indeed, in 2010, Senegal was ranked 15th world producer, with an output of about 20 000 tonnes per annum (PADEC, 2010). Accounting for 0.8% of world production, Senegal is the second to the last cashew producing country in West Africa, ahead of its Gambian neighbour. The rate of nut processing in this country is also among the lowest in West Africa, where the average hovers around 4 to 5% (Rongead, 2013). From a conceptual standpoint, processing may either be artisanal or industrial. If artisanal processing is viewed as the starting point of industrialization, the concepts of processing and industrialization may be considered as having roughly the same meaning in this text, especially as most of the industrial cashew processing enterprises in the Casamance region started off artisanally before gradually procuring semi-automatic and automatic equipment.

This research thus focuses on the factors explaining the weakness of cashew nut production and the poor industrialization of the sub-sector, as well as on the mechanisms for marketing the commodity. The research is based on

the assumption that the poor industrialization of cashew nut sub-sector in Casamance is due to low production levels and the lack of regularization of the market hit by a rapid increase in prices. Lastly, the purpose of the research is to draw up a monograph on the cashew sub-sector in Casamance, with emphasis on the constraints and challenges facing its transformation. Concrete experiences of the players are reported for better understanding of the scope of the factors influencing the development of cashew nut agro-business in the study area, and also for better perception of the challenges facing the sector and the prospects for its development, and particularly its industrialization.

I. Cashew Areas and Market in Senegal

The methodology, organization and geography of cashew plantations and marketing facilities are described in this section. Understanding these factors is crucial to better unravelling the mechanisms affecting the industrialization of the cashew nut sector.

I.1. Methodology

The research began with a literature search that made it possible to review the works published on the subject. This phase is followed by a collection of data on the study area through interviews with stakeholders involved in the sub-sector from producers to collectors, transporters and processors. Data collection also consisted in obtaining a quantitative database from the institutions involved in the management and regulation of the sub-sector in Senegal, in particular, the Casamance Economic Development Support Programme (PADEC) and the International Relief Development (IRD). IRD is an American NGO funded by the US Department of Agriculture (USDA) for the development of the cashew chain. It has been active in Senegal and Gambia since April 2014 and has contributed significantly to the production of quantitative data on the production, processing and marketing of cashew nuts. PADEC is a Senegalese Government programme working throughout Casamance for the development of emerging agricultural sub-sectors with high value added such as cashew nuts, honey and bananas. It has been involved in financing and strengthening the capacities of operators in the cashew nut sub-sector since 2010.

I.2. Casamance: cashew nut basin of Senegal

Of Senegal’s 14 regions, only the Ziguinchor, Sédhiou and Kolda regions of the Casamance basin (south of Senegal) and the Fatick region produce cashew nuts (Fig 1). Thus, the bulk of Senegal's production comes from Casamance. Similarly, this region contains more than 80% of the cashew nut acreage. The Ziguinchor commune is Casamance’s main city and the hub of cashew nut marketing and processing activities. The development of the

sub-sector in recent years has resulted in significant socio-spatial changes in the city (Badji, 2014).

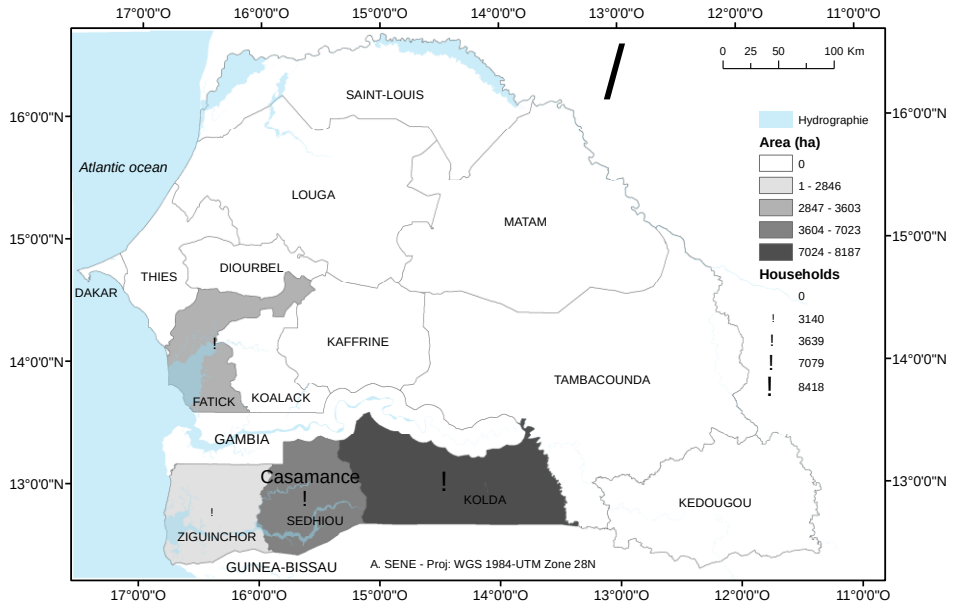

Figure 1: Total area of farms and number of households involved in cashew production by region in Senegal
Source: Author, 2019

I.3. An essentially family production with smallholdings

The introduction of cashew nuts in Casamance dates back to the 1950s, prior to Senegal's independence in 1960. This plant was introduced in the region by the colonial administration at the time, not for commercial purposes, but rather to serve as firewalls protecting Senegal's only large forest mass in Casamance. Today, three types of plantations are noted in the area: firewall plantations generally used to protect forests, villages or farms from bush fires; agro-forestry plantations, which are forests planted for reforestation purposes by the forestry technical services. These plantations are usually located in classified or community forests. Lastly, family- or individually-owned commercial plantations. Plantations of the latter category are currently the most numerous and tend to be further gaining ground. It is worth noting that today the first two types of plantation tend to be commercially oriented, since the nuts are harvested by local residents and soldat roadsides.

As far as plantations are concerned, the main challenge encountered is that of land issue, especially the land access difficulty faced by foreigners. The political instability which the area has experienced over the past 30 years, marked by armed rebellion, has exacerbated the sensitivity of land issues. Currently, most cashew plantations belong to the natives. However, producers

in this category, though in the majority, encounter several difficulties, including the lack of information on modern production optimization practices and the absence of investment in their plantations.

Cashew farms in the Casamance region cover an average acreage of about 18 000 hectares (ha), mainly located in the Kolda (8,000 ha) and Sédhiou (7,000 ha) regions, compared with only 3,000 ha in the Ziguinchor region. This uneven distribution of cultivated acreage is linked to the different urbanization rates of the regions. Ziguinchor has an urbanization rate of 51.1%, which is significantly higher than the rates of 15% for the Kolda region and 15% for the Sédhiou region (ANSD, 2013). Available farmland is therefore, more abundant in the latter two regions. Moreover, the cultivated farm area per household varies among the departments of Casamance regions. For example, the Sédhiou region, comprising the Bounkling, Goudomp and Sédhio departments, has the highest acreageper household, estimated at roughly 3,785 ha (Fig. 2). These values show that cashew nut farming in this basin is essentially community-based, practised by families, and not intensively by large-scale private farmers with the capacity to mobilize greater acreage. This situation is also similar to that of most West African basins where cashew cultivation is practised. In the Cascades and Hauts-basins regions of South-West Burkina Faso, for example, the average cashew farm acreage per household does not generally exceed 2,185 ha (Audouin and Gonin, 2014).urbanization.

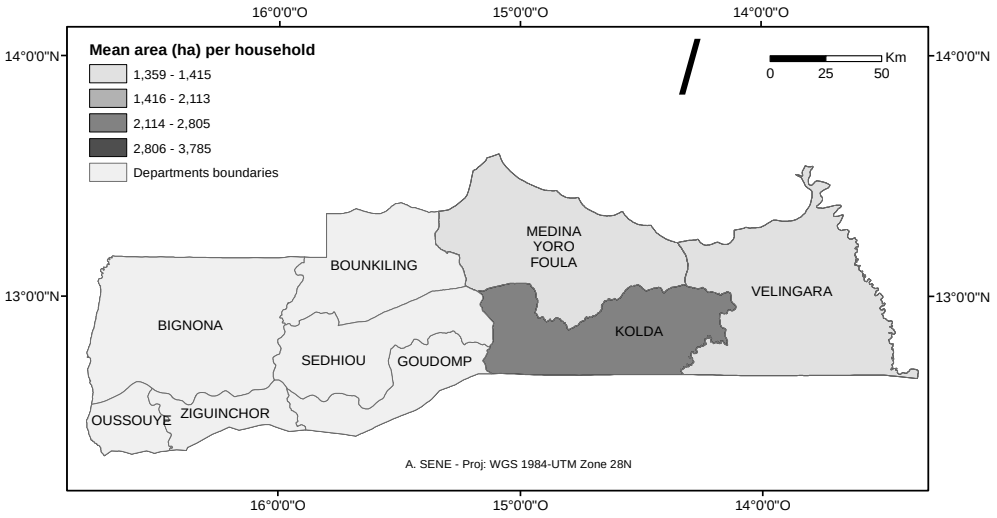

Figure 2: Average cropping area (per ha) in the Casamance departments
Source: Author, 2019

I.4. Ziguinchor commune, the hub of an international cashew nut marketing network

The chief town of the Ziguinchor region, the commune is the 5th largest city in Senegal and the main agglomeration of Casamance. Located on the Casamance River, about 70 km from the Atlantic Ocean, it has an area of 4,450 ha and a population of approximately 381,415 inhabitants (ANSD, 2013). Its geographical location between two neighbouring countries –The Gambia to the North and Guinea-Bissau to the South - makes it a crossroads city for trade and migratory flows in the area. The city has a port, an airport and asphalted roads connecting it to the major cities of the other regions of Casamance and neighbouring countries. This transport infrastructure network, which is significantly better than that of other towns in the area, contributes to the city's attractiveness and justifies its central position in the trade in cashew nuts and other agricultural products such as groundnuts. Indians, the main exporters of raw nuts in the area, are located in the city of Ziguinchor where conditions are more favourable, thus increasing the city's centrality of in the marketing of cashew nuts

Cashew nut marketing flows occur in many stages, involving several means of transport (Fig. 3). Producers use bicycles or carts to transport the nuts from the farms to their homes. In the villages, the product is transported in carts and 1 to 4 tonne-vans to secondary urban centres. Large trucks of about 20 tonnes are then used to convey the product from secondary urban centres to the city of Ziguinchor, where the main market of the sub-region is located. Finally, in the last lap, the product is conveyed by large 30-35 tonne-trucks from the city of Ziguinchor towards the Gambia Port located 150 km away, which is thus nearer and cheaper than the Dakar port, located more than 430 km away. From the Gambia, the product is shipped to Asia, especially India.

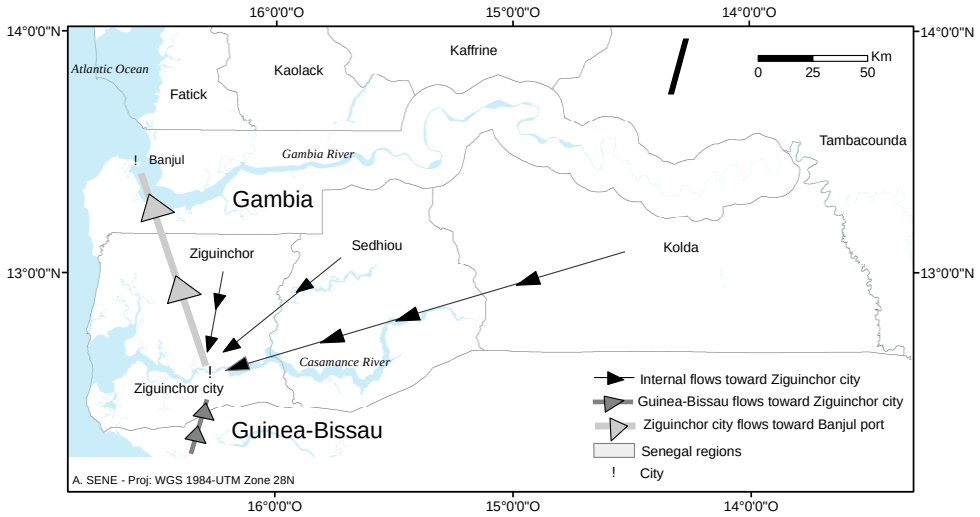

Figure 3: Channels for the marketing of cashew nuts in Casamance
Source: Author, 2019

However, several difficulties are encountered in the area of transport, including the numerous charges and taxes payable at various road checkpoints. The customs collect CFAF 40,000 per 35-tonne truck, which adds up to a total of CFAF 22,840,000 for the 571 trucks loaded annually. The police and the gendarmerie receive between CFAF 5,000 to 15,000/truck whenever they are met on the way. There is also the communal tax of about CFAF 200 per bag, which amounts to a total of CFAF 15,000 for a truck of 750 bags. This amount is paid in each commune crossed. The poor condition of secondary roads is also a major constraint regarding the transportation of the product. It leads to high repair costs and time loss for truckers.

I.5. Indians, key players in the cashew nut industry development

There are two categories of players: internal and external. Internal players are directly involved in such activities as production, export, transport, processing and marketing. These players comprise producers, collectors, transporters, traders, consumers, banks, processors and exporters. External players include NGOs, producer associations, Government technical services (such as Forestry Inspectorates), local authorities, customs and the police. Players in this category do not intervene directly in the sub-sector, but participate in its regulation. However, there is a lack of organization and the absence of a comprehensive and integrated approach to the management of the sub-sector despite the existence of an inter-professional organization of cashew stakeholders in Casamance (COFAC), a formal framework for consultations set up with the support of the Casamance Economic Development Support Programme (PADEC). The poor organization partly

explains the low level of State involvement, often decried by most players on the ground.

The marketing of the product comprises three stages. In 2016, the farm gate price per kilogramme (kg) was CFAF 750. The collector who bought from the farmer had a commission of CFAF 15 on each kg purchased and the trader a commission of CFAF 25 on each kg sold to the Indian exporter. The price, which is determined by international market forces, has tended to increase over the years (Fig. 4), going from less than CFAF 200/kg at the farm gate in 2001 to CFAF 750/kg at the farm gate in 2016. In 1992, the farm gate price was just CFAF35/kg.

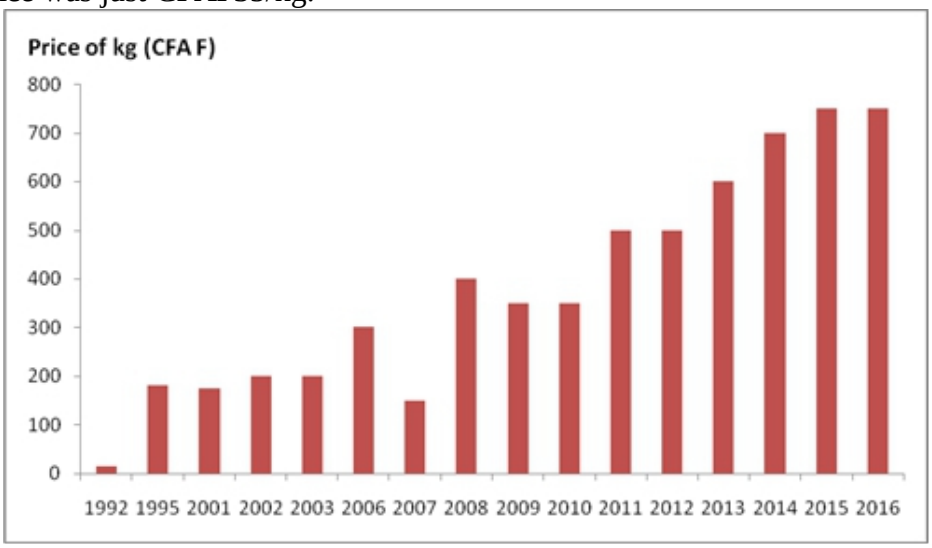

Figure 4: Trend in the farm gate price per kilogramme of cashew nuts
Source: Author, 2019

The arrival of the Indians led to an exponential increase in the price of the product and made it a very important financial and economic commodity by internationalizing its marketing. With the arrival of Indians in 1995, the farm gate price per kilogramme jumped to CFAF 180. The presence of Indians not only caused an increase in prices, but also sparked a rush by the local people towards the sub-sector, which had thus become more lucrative. It is worth noting that the marketing chain was financed mainly by Indian exporters and, to a lesser extent, by local banks. In other parts of West Africa, such as some localities in Togo, the development of the cashew sub-sector is linked to the cotton crisis that was characterized by falling cottonseed prices (Sokemawu, 2015). Indian control over cashew marketing is not, however, a practice specific to Casamance. In Côte d'Ivoire and Burkina Faso, the arrival of Indians in 1995 also led to a real boom in the cashew market (Andouin and Gonin, 2014).

II. Industrialisation challenges

Cashew nuts are processed by artisanal and semi-industrial units in Casamance. Although the operation leads to the production of a high value-added product that is very sought after locally, nationally and internationally, cashew nuts industrialization remains a troubled sector. In Casamance, there are only 20 processing enterprises, of which four are semi-industrial and 16 artisanal units. Two of the semi-industrial units are located in the city of Ziguinchor: GIE Beycounda and SCPL PAOA. It is worth noting that in 2004, the city of Ziguinchor had four semi-industrial processing units. Two enterprises have closed down and two have managed to survive. The study of the latter enterprises shows similarities and differences relating to their evolution, and reveals the main constraints and challenges faced by the industrialization sector in the zone.

The players involved in cashew nut processing buy the product from collectors in most cases. Sometimes they may partner with producers who supply them directly. Faced with the escalation of raw material prices, both enterprises are resisting closure. They have developed adaptation strategies, but the outcomes of the impacts are, however, varied between them.

For both enterprises, the main processing-related difficulty noted occurs at the husking phase. They use manual and semi-automatic machines for the fairly low-skilled and labour-intensive operations. The lack of resources does not allow them to join automated husking chains, which would optimize production while lowering costs.

The main challenge faced by both enterprises is the high supply costs. In 2016, 1 kg raw nuts cost CFAF 750, while the price of 1 kg of processed nuts was sold at CFAF 8,000. The price of finished products on the local market is set by the processors based on the price of unprocessed nuts. However, it should be noted that when processed, 4 kg of raw nuts produce750 grams of nuts. Thus, the purchase price of the 4 kg of raw nuts is FCFA 3,000, while the retail price of 750 grams of processed nuts produced is FCFA 6,000. The profit on the 4 kg of raw nuts before deduction of expenses related to the payments to staff and employees thus amounts to about CFAF 3,000. Thus, the sector is profitable for processors only if they handle the produce in large quantities. To meet that condition, processors would need considerable financial resources to purchase large stocks of raw nuts, and this explains why the nut processing sector is in a state of paralysis throughout the Casamance.

Moreover, processing should be a year-long activity, whereas local nut production lasts just three months, from April to June. So, the challenge for processing enterprises is to be able to buy all the necessary raw nuts during the three months and store them to last for the rest of the year. Since the product is very expensive, substantial funding is required to buy a 12-month stock within a three-month period. It is a real challenge, especially in a context

where Indians have the financial resources to buy all the products available on the market.

III. Discussion: Industrialisation prospects and recommendations

In Casamance, cashew nut industrialization is increasingly gaining ground, with the processing of cashew apples into juice or wines. Generally, the processing is performed by small artisanal plants run by women's groups. In general, these are small artisanal processing plants run by women's groups. The apple is first crushed to extract the juice and then the liquid is stored in 10-litre jerry cans on the ground until fermentation.

The apple valorisation level is currently low. In Casamance, only about 20% of the cashew apple production is processed. Of this proportion, only about 1% is processed into cashew juice and the remaining 99% is processed artisanally into wine by women, usually of the Mancagne and Manjacque indigenous ethnic groups. The processing of the apple is therefore, a valuable step forward for the sub-sector in Casamance, especially since for each 1kg of raw nuts obtained, up to 10 litres of raw cashew juice may be produced. A litre of raw cashew juice is sold for CFAF 100 (implying that 10 litres will fetch CFAF 1,000). The price of a kg of raw nuts is yet to reach CFAF 1,000. Thus, producing raw juice in the same artisanal fashion is more profitable. Moreover, when raw juice is processed for better preservation, pasteurized and bottled, it is sold at about CFAF 1,100 per litre on the local market.

Industrialization is still low in the cashew nut sub-sector. It affects less than 5% of the nuts produced. The rest, amounting to more than 95%, is purchased by Indian exporters. Their presence in the local sector thus seems rather positive, since it motivates the producers to produce more. One of the major constraints to the industrialization process is the low production level. Currently, Senegal's national annual average production of cashew nuts stands at 20,000 tonnes. A substantial amount of this production comes from plantations in Guinea-Bissau. For security reasons, the Indians prefer to settle in the city of Ziguinchor and buy nuts from Guinea-Bissau, hauled across the border and stocked in warehouses in the city. The price difference is one of the other factors favouring cashew nut transit from Guinea-Bissau to Ziguinchor. In 2016, when the price per kg in Senegal was CFAF 750, it was only CFAF 325 in Guinea-Bissau. With the recent measures taken by the Government of Guinea-Bissau to ban the transit of cashew nuts to Ziguinchor for marketing, the flows have taken on a clandestine dimension. Several bypasses are then used to cross the border and convey the product to the Ziguinchor market.

Increasing production is therefore, a major challenge for Casamance. Its low production level is linked to the lack of efficient plantations and/or the

insufficiency of plantations. In this context, there is a need to improve practices in an effort to increase plantation output and production. Management techniques are being disseminated among producers by certain organizations (PADEC, Djibelor National Centre for the Training of Water, Forest, Hunting and National Parks Technicians, etc.) to help them improve their production. These institutions are also working on the opening of new plantations with plant varieties improved through grafting and best species identification.

To ensure the cost-effectiveness of cashew nut processing, value could also be added to the husks. The anacardid acid (CNSL) contained in the husks could be recovered and sold. The residues are combustible and could be recycled into gas or electricity. A cashew processing unit that extracts value from husks produces up to three times its energy needs and may even sell the surplus on the market.

Nowadays, Indians are moving away from cashew nut processing and are increasingly turning towards sectors with very high value added products such as the aero-space. This change in Indian policy has a twofold impact on the local processing industry. On the one hand, Indians based in the commune are increasingly interested in buying the processed product. So, since 2015, SCPL PAOA has been selling its finished products to them. On the other hand, the Vietnamese will not be able to satisfy all the market that was traditionally supplied by Indians. The international context is thus currently favourable for cashew nut-processing African countries. Côte d'Ivoire is a good example of a country where the development of the processing sector is encouraged. It levies taxes on raw cashew exports and pays the proceeds to processors to boost their production. This policy has increased the attractiveness of the cashew sector and lured international investors.

However, Senegal’s national agricultural policy is very dynamic. Since the political alternation of 2012, several pro-active agricultural policies have been launched. The Programme to Accelerate the Pace of Senegalese Agriculture (PRACAS) aims to achieve self-sufficiency in rice by 2017, onion by 2016, optimize the performance of the groundnut sector and develop the off-season fruits and vegetables section, and meet an export target of 1,575,000 tonnes by 2017 (IPAR, 2015). PPDC’s ultimate goal is to increase agricultural productivity and improve the accessibility of rural areas in Casamance. Senegal's proactive agricultural policy is also characterized by its commitment to strengthen public-private partnership and increase investment in the sector through the National Agricultural Investment Plan (NIPA) and the New Alliance for Food Security and Nutrition (NASAN). All these policies focus on improving agricultural production and marketing. The issue of agricultural industrialization is not yet fully addressed in the current agricultural policies and practices of the State, even though it is briefly

mentioned in the Emerging Senegal Plan (PES), which lays out Senegal's vision for economic and social development by 2035, with agriculture as the first priority.

Another important observation is that the Senegalese State seems to give greater priority to certain sub-sectors, such as rice, groundnut and onion, which account for the bulk of the substantial funds allocated to the sector. For instance, during the 2013-2014 crop year, the overall cost of the seed subsidy was CFAF 10.480 billion. Of this amount, 66.8% was allocated to groundnuts, 10% to rice and the remaining 23.2% to all the other agricultural sub-sectors (IPAR, 2015). Thus, the priority which the State policy gives to certain sub-sectors seems to be at the expense of others.

Casamance's specific feature is that since the beginning of the 1980s, it has been marked by a political crisis pitting the State of Senegal against the armed wing of the Movement of the Democratic Forces of Casamance (MFDC). Although this crisis has been described as "low intensity", it has generally contributed to the region's territorial isolation (Marut, 2002). Despite the noticeable lull in the conflict and the significant investments made by the State in this region over the past few years in an effort to improve its accessibility (establishment of the PPDC in 2013, investment in maritime transport, construction of the Trans-Gambian Bridge, etc.), the business environment has not yet reached its potential to attract private investors.

Lastly, we advocate a dynamic policy that would lead to the development of the agricultural resources of each region of Senegal by increasing investment in the industrialization of these resources. In Casamance, a strong national policy for the industrialization of the agricultural sector would not only stimulate employment and serve as an important lever for combating poverty, it would especially help to mitigate the huge losses of fruit products such as cashew nuts and mangoes, which rot annually on the spot due to lack of a real industrial processing sector and transport difficulties (high costs and poor state of the roads).

Conclusion

This work shows that in Senegal cashew nuts are mainly produced in Casamance. It confirms our hypothesis announced in the introduction that the low production is particularly linked to the category of producers that dominate the sector, since the farms are traditional, family-owned smallholdings, generally less than 3.8 ha in size. The results also show that the prices of raw nuts have soared from CFAF 35/ kg at the farm gate in 1992 to CFAF 750 / kg at the farm gate in 2016 with the arrival of Indian exporters in the market. Low production, coupled with high demand, makes it difficult to supply the processing industries, thus constituting a major constraint on the development of the industrialization sector. The surveys have shown that the

sector's industrialization is marginal (less than 20% of cashew apples and less than 5% of cashew nuts are processed).

To develop this sector in a favourable international context, since Indians are more interested in the processed product, there is a need for the State to be more involved in order to better regulate the market. There is also an urgent need to move towards land reform or, in any case, the creation of favourable local conditions to attract large private producers with the capacity to boost production to levels that would satisfy the supply needs of industrial processing enterprises. Family production, which is still largely predominant, can be improved by providing technical support (training of producers, improved varieties, etc.) aimed at increasing the yields of existing plantations.

Lastly, over and above the important recommendations proposed for the development of the cashew nut sub-sector in Senegal, in general, and the enhancement of its industrialization, in particular, this research constitutes an unquestionable scientific contribution to agro-business in Africa, especially as it highlights, through the example of the cashew nut, the real dynamics and socio-spatial recompositions that agro-business triggers in African territories.

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